

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

1.-12. (Cancelled)

13. (Currently Amended) A titanium metal implant comprising a metal substrate for use in a surgical procedure, said implant having a surface layer integral with said metal substrate and incorporating a biocidal metal material, said implant comprising as said surface layer an anodized hard layer ~~as said surface layer and including pits in said surface~~hard layer, ~~said hard layer and said pits including ions of said biocidal metal material as a result of ion exchange, said pits including a softer and more porous material than said~~the hard layer, said hard layer and said pits including ions of said biocidal metal material as a result of ion exchange, with said more porous material in the pits having absorbed biocidal metal material to a larger extent than said hard layer~~with said hard layer having absorbed less biocidal metal material than the more porous material in said pits.~~

14. (Currently Amended) A titanium metal implant according to claim 13, wherein titanium is present in said substrate implant ~~at~~ at least 75% by weight.

15. (Currently Amended) A titanium metal implant according to claim 14, wherein ~~said~~the titanium is present as pure titanium or as a titanium alloy.

16. (Cancelled)

17. (Currently Amended) A titanium metal implant according to claim 13, wherein an oxide or phosphate ~~oxide~~ matrix is present at said surface layer of said metal substrate, and wherein biocidal metal ions are absorbed into the oxide or phosphate matrix.

18. (Cancelled)

19. (Currently Amended) A titanium metal implant according to claim ~~17~~18, wherein ~~said the~~ biocidal metal material-ions are selected from the group consisting of: silver, gold, platinum, ruthenium and palladium.

20. (Currently Amended) A titanium metal implant according to claim 13, wherein ~~said the~~ hard layer is 0.14 micrometers thick.

21. (Currently Amended) A titanium metal implant according to claim 20, wherein ~~the~~said hard layer includes pits having a diameter of approximately 5 micrometers and depth of approximately 0.4 micrometers.

22. (Currently Amended) A titanium metal implant according to claim ~~21~~13, wherein ~~said the~~ pits make up between 15 and 20% of the surface area of ~~the~~said surface layer.

23. (Currently Amended) A titanium metal implant according to claim 13, wherein ~~the~~said pits extend through said surface layer into said metal of said implant.

24. (Currently Amended) A method of treating a titanium metal implant comprised of a metal substrate for use in a surgical procedure, said method including the steps of ~~forming a surface layer integral with said metal substrate, anodising said the~~ implant for forming a surface layer integral with said metal substrate thereon, rinsing the anodised implant, and then performing ion exchange so as to for-incorporateing ions of a biocidal metal into ~~the~~said surface layer, characterised in that said method comprises anodising ~~said the~~ implant at a voltage above 50 volts for a period of at least 30 minutes, so as to for-generateing the ~~said~~ surface layer, wherein the ~~current density, the electrolyte concentration, the duration of anodising and the magnitude of the anodising voltage generates~~ a dense hard surface layer and also shallow pits in said the surface layer ~~wherein said pits which~~ are filled with a somewhat softer and more porous material.

25. (Currently Amended) A method as claimed in claim 24, wherein said biocidal metal is silver.

26. (Cancelled)

27. (Currently Amended) A method as claimed in claim ~~24~~⁵ wherein ~~said~~the anodising step uses an electrolyte comprising phosphoric acid.

28. (Currently Amended) A method as claimed in claim ~~27~~⁶ wherein ~~the~~said phosphoric acid is of concentration between 5% and 20% by weight.

29. (Currently Amended) A method as claimed in claim 24 wherein ~~the~~said electrolyte comprises chloride ions at a concentration no more than 500 ppm.

30. (Cancelled)

31. (New) A titanium metal implant according to claim 19, wherein other elements are present in said surface layer, selected from the group consisting of: copper, tin, antimony, lead, bismuth and zinc.

32. (New) A method as claimed in claim 24, wherein the pits make up between 15 and 20% of the surface area of the surface layer.

33. (New) A method as claimed in claim 32, wherein the pits extend through said surface layer into said metal of said implant.